

REMARKS

In the Office Action dated April 23, 2004, the Examiner objected to claims 2 and 8 and stated that they would be allowable if rewritten to incorporate the limitations of their base claims 1 and 7. This has been done by the present amendment, and therefore, applicants submit that claims 2 and 8 are now in allowable form.

The Examiner rejected claims 1,4,5,7,10 and 11 as being anticipated by Milstead. Applicants traverse this rejection.

The present invention is directed to a rotary kiln for the production of cement clinker wherein an axially movable burner lance extends through a stationary kiln outlet housing into an end of the rotary kiln. As described in the specification, extremely hot cement clinker is discharged from the rotary kiln into the stationary kiln outlet housing, thereby subjecting the burner lance which extends therethrough to extremely high temperatures and radiant energy from the red hot cement clinker. Hot gasses with clinker dust carried therewith from the red hot clinker are also directed through the stationary kiln outlet housing from the red hot cement clinker subjecting the burner lance to abrasive conditions as well. The extent of the burner lance through the stationary kiln outlet housing can reach up to 10 meters for some kilns, thus providing a very large area for the heat and abrasive forces to operate on with respect to the burner lance. Applicants have addressed this problem by providing a replaceable burner protection shield which also extends through the stationary kiln outlet housing which is located at a distance spaced below the burner lance. Since the red hot cement clinker is also located below the burner lance, this positioning of the shield protects the burner lance against the radiation and abrasive air flow from the red hot cement clinker. Independent claims 1 and 7 have been amended to clarify that the shield extends through the stationary kiln outlet housing.

The device disclosed in Milstead, on the other hand, has only a very short mouthpiece of the burner 22 which extends into an area subject to high heat. The main body of the burner 22 is positioned outside of the area where the flame develops and where the hot material resides. Thus no heat or abrasive protection is required for the burner 22. The protection shields 44 identified by the Examiner are not for the purpose of protecting a burner lance as in the present invention. Apparently these shields are for protecting the outer wall of the rotary drum, a completely different area of concern than that addressed by the present invention. The shields 44 of Milstead are not positioned in the area of the burner 22 and provide no protection whatsoever to the burner, or any portion of it.

Thus, Milstead does not teach or suggest an axially movable burner lance which extends


through a stationary kiln outlet housing; a replaceable burner protection shield extending through the stationary kiln outlet housing; a replaceable burner protection shield located at a distance spaced below the burner lance, nor any other structure that would protect a burner lance extending through a stationary kiln outlet housing in a rotary kiln.

Separately for each of these reasons, applicants respectfully submit that independent claims 1 and 7, along with their dependent claims, are patentably distinguishable over Milstead.

Claims 1, 3, 4, 5 and 6 were rejected as being obvious over Kramlehner. Applicants traverse this rejection as well. Kramlehner discloses only a hollow roller 1 that is heated on the inside for the production of corrugated paper. A combustion tube 11 heats a radiator tube 10 from the inside, which releases its radiant heat to the hollow roller. Both roller bearings are protected from the inside by means of heat shields 12 and 13 which extend fully around the interior circumference of the roller, which is necessary in that the roller rotates around the radiator tube 10, and is subject to high heat in all locations. Applicants have clarified claim 1 with respect to the fact that the burner protection shield does not extend fully around the burner lance, a construction that Kramlehner teaches directly away from and directly contradicts. Thus, claim 1 and its dependent claims cannot be deemed obvious in view of Kramlehner.

In view of the foregoing amendments and remarks, applicants respectfully submit that all of the claims of the application are now in allowable form, and applicants respectfully request the Examiner to indicate all claims as allowed and to pass the application to issue.

Respectfully submitted,


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